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DOTE, JANIS L	
ART UNIT	**PAPER NUMBER**
1756	

DATE MAILED: 10/25/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/014,570	SCHARFE ET AL.	
	Examiner	Art Unit	
	Janis L. Dote	1756	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *11 August 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4-26,28 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *10* is/are allowed.

6)☒ Claim(s) *1,2,4-9,11-26,28 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *07/15/04*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

1. The examiner acknowledges the cancellation of claim 27, the amendments to claims 1, 2, 10, 11, and 14-16, and the addition of claims 28 and 29, filed on Apr. 30, 2004. Claims 1, 2, 4-26, 28, and 29 are pending.

2. The "Amendment to the specification" section filed on Apr. 30, 2004, was held not to be in compliance with 37 CFR 1.121, for the reasons discussed in the "Notice of Non-Compliant Amendment" mailed on Jul. 19, 2004. Accordingly, the "Amendment to the specification" section filed on Apr. 30, 2004, has not been entered.

3. The objections to the specification set forth in the office action re-mailed on Feb. 10, 2004, paragraph 5, items (1) and (2), have been withdrawn in response applicants' comments filed on Apr. 30, 2004, section E, page 13, line 24, to page 14, line 21. Applicants state that the disclosure of "a hole blocking layer wherein" (emphasis added) the reference labels "a" through "d" have particular numerical values in the amended paragraph beginning at page 3, line 21, of the specification, filed on Aug. 14, 2003, lines 27-28, refers to a "particular silane having the formula defined in part by the letters a-d. Those letters denote mole fractions of the polymer structure (III) on page 4 of the application [sic: line 13 of the amended paragraph beginning at page 3, line 21, filed on Aug. 14, 2003]." In other words, the disclosure refers to another embodiment of the hole blocking layer comprising a polymer having the

structure (III) with the particular disclosed mole fractions "a" through "d." Applicants state that the disclosure of "a hole blocking layer wherein" (emphasis added) A, B, D, and F may present particular organic groups in the amended paragraph beginning at page 3, line 21, of the specification, filed on Aug. 14, 2003, lines 29-35, refers to an another aspect that "concerns a photoconductive imaging member [sic: hole blocking layer, see the amended paragraph beginning at page 3, line 21] wherein A is selected from a particular group of divalent linkages, and further wherein B, D, and F are each independently selected . . . groups A, B, D, and F are segments of the polymer backbone of structure (III) on page 4 of the application [sic: line 13 of the amended paragraph beginning at page 3, line 21, filed on Aug. 14, 2003]." In other words, the disclosure refers to another embodiment of the hole blocking layer comprising a polymer having the structure (III) wherein the groups A, B, D, and F represent particular organic groups.

The objection to the specification set forth in the office action re-mailed on Feb. 10, 2004, paragraph 6, item (1), has been withdrawn in response to all of applicants' comments filed on Apr. 30, 2004, page 17, lines 1-30.

The objections to the specification set forth in the office action re-mailed on Feb. 10, 2004, paragraph 7, have been withdrawn in response to the amended paragraphs beginning at page 6, line 4, and at page 18, line 16, of the specification, filed on Aug. 11, 2004.

The rejection of claim 11 under 35 U.S.C. 112, second paragraph, set forth in the office action re-mailed on Feb. 10, 2004, paragraph 9, has been withdrawn in response to the amendment to claim 11 filed on Apr. 30, 2004.

The rejections of claims 1 and 4-26 under 35 U.S.C. 112, first paragraph, set forth in the office action re-mailed on Feb. 10, 2004, paragraph 11, items (1) and (2), have been withdrawn in response to the amendments to claims 1, 10, 15, and 16, filed on Apr. 30, 2004.

The objection of claim 14 set forth in the office action re-mailed on Feb. 10, 2004, paragraph 12, has been withdrawn in response to the amendment to claim 14 filed on Apr. 30, 2004.

The rejection of claims 1, 2, 7-9, 13, 15, 16, and 22-26 under 35 U.S.C. 102(b)/103(a) over US 5,556,730 (Nguyen) combined with the other cited references, set forth in the office action re-mailed on Feb. 10, 2004, paragraph 26, has been withdrawn in response to the amendments to claims 1 and 2 filed on Apr. 30, 2004, which added the limitation that the hole blocking layer is located between the charge transport layer and the charge-injecting layer. For all the reasons discussed by applicants filed on Apr. 30, 2004, pages 32-33, Nguyen does not disclose or suggest a photoconductive imaging member comprising a hole blocking layer located between a charge transport layer and a charge injecting layer as recited in instant claims 1 and 2.

The rejection of claims 1, 2, 4-9, 13-16, and 21-26 under 35 U.S.C. 103(a) over US 4,251,612 (Chu) combined with Nguyen and the

other cited references, set forth in the office action re-mailed on Feb. 10, 2004, paragraph 27, has been withdrawn in response to the amendment to claims 1 and 2 as described supra. The combined teachings of Chu with Nguyen and the other cited references fail to teach or suggest an imaging member comprising a hole blocking layer located between a charge transport layer and a charge injecting layer as recited in instant claims 1 and 2.

4. The amendment filed on Aug. 11, 2004, is objected to under 35 U.S.C. 132 because it introduces new matter into the disclosure. 35 U.S.C. 132 states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows:

(1) In the amended paragraph beginning at page 6, line 4, filed on Aug. 11, 2004, the disclosure that the "charge transport polymer is of a thickness of from about 10 micrometers to about 75 micrometers" (emphasis added) lacks antecedent basis in the originally filed specification. The originally filed specification at page 6, lines 12-13, discloses that the "charge transport layer is of a thickness of from about 10 micrometers to about 75 micrometers" (emphasis added), not a charge transport polymer.

(2) In the amended paragraph beginning at page 6, line 4, filed on Aug. 11, 2004, the disclosure that the "charge transport polymer can comprise photoconductive particles of hydroxygallium phthalocyanine" (emphasis added) lacks antecedent basis in the

originally filed specification. The originally filed specification at page 6, lines 12-14, discloses that the "charge transport layer . . . comprises photoconductive particles of hydroxygallium phthalocyanine," (emphasis added), not a charge transport polymer.

Applicants are required to cancel the new matter in the reply to this Office Action.

5. The disclosure is objected to because of the following informalities:

(1) The amended paragraph beginning at page 6, line 4, of the specification, filed on Aug. 11, 2004, discloses the charge transport polymer polysebacoyl-TBD (PSEB). It is not clear what is the polymer polysebacoyl-TBD, which the specification neither defines nor describes.

(2) In the only example in the specification, the hole blocking layer is said to comprise a polymer of Formula (III). See the specification, page 18, line 26, to page 19, line 1. The amended paragraph beginning at page 3, line 21, of the specification, filed on Aug. 14, 2003, discloses that the polymer represented by Formula III is obtained by reacting a polymer of Formula I with an organosilane of Formula II. However, in the example, the hole blocking layer is obtained from a solution comprising 3-aminopropyl-trimethoxysilane. There is no disclosure of reacting the silane compound with a polymer of Formula I. Thus, it is not clear how the blocking layer in the example comprises a polymer of Formula III.

(3) The amended paragraph beginning at page 6, line 4, of the specification, filed on Aug. 11, 2004, discloses that the "aryl amine contains from about 1 to about 12 carbon atoms." It is not clear how an aryl amine can contain "about 1 carbon atom."

Appropriate correction is required.

Applicants' arguments filed on Apr. 30, 2004, regarding items (1) and (2) above have been fully considered but they are not persuasive.

(1): Applicants assert that "polysebacoyl is a hole transporting polymeric material of N,N'-diphenyl-N,N'-bis[3-hydroxyphenol]-[1,1 biphenyl]-4,4'diamine and sebacoyl chloride known in the art." Applicants refer to example VIII of US 5,606,396, example 8 of US 6,165,670, and US 5,262,512.

However, none of references cited by applicants defines the term "polysebacoyl-TBD." US 6,165,670 in example 8 and US 5,606,396 in example VIII, both disclose the term "polysebacoyl, a hole transporting polymeric material of N,N'-diphenyl-N,N'-bis[3-hydroxyphenyl]-[1,1 biphenyl]-4,4'diamine and sebacoyl chloride described in U.S. Pat. No. 5,262,512." US 5,262,512 discloses polyarylamines represented by the formula I disclosed at col. 6, line 40. The references do not define the term "polysebacoyl-TBD." Nor is there any disclosure in the instant specification indicating that the term "polysebacoyl-TBD" is another word for "polysebacoyl," as defined in US 6,165,670 and US 5,262,512. As noted by applicants in their response filed on Aug. 14, 2003, page 15, lines 2-3, the term "sebacoyl" has the chemical structure of $-OC(CH_2)_8CO-$. Thus, the term

"polysebacoyl . . ." just means that the polymer comprises sebacoyl groups. The specification does not define the term "TBD." The specification does not disclose the chemical structure of the polymer. Nor does the specification disclose whether the polymer is a condensation or addition polymer. Applicants have not pointed to any disclosure in the specification as to what is meant by term "polysebacoyl-TBD." Clarification is requested.

(2): Applicants argue that the "specification describes several embodiments of the hole blocking layer" and that "there is no requirement in the broader claims of the application that the hole blocking layer polymer be produced from the reaction of Scheme 1." Applicants also assert that "[t]here is no requirement that the "3-aminopropyltrimethoxysilane of the example (see page 18, line 27) be formed according to the reaction scheme 1 exemplified on page 4 of the specification."

However, applicants have not addressed the objection. The description of making the hole blocking layer in the example is incomplete. The example does not disclose how a polymer of Formula (III) disclosed on page 4 of the originally filed specification is obtained by merely heating a solution containing only 3-aminopropyltrimethoxylsilane. The example states that "a hole blocking layer from a solution of 0.32 gram of 3-aminopropyl-trimethoxylsilane in 9.2 grams of an 86.1/10.4/3.5 (by weight) mixture of tetrahydrofuran/ethanol/water. After drying at 135°C for 15 minutes, a hole blocking layer encompassed by Formula (III) of a

thickness of about 0.5 to 0.7 micron was obtained." As discussed in the objection above, the example does not explain how a polymer of Formula (III) is obtained by merely heating a mixture of 3-amino-propyltrimethoxylsilane in 9.2 grams of an 86.1/10.4/3.5 (by weight) mixture of tetrahydrofuran/ethanol/water. The description in the example is incomplete. Furthermore, it is not clear what is being exemplified because formula (I) at page 4 of the specification encompasses numerous polymers. Clarification is requested.

6. The disclosure is objected to because of the following informalities:

The amended paragraph beginning at page 8, line 14, of the specification, filed on Aug. 14, 2003, was amended to disclose that the cross-linked silicone contains cross linking of "about 6% to about 9%" (emphasis added). It is not clear what is the basis of the cross linking (e.g., mole, weight, number, etc.).

Appropriate correction is required.

Applicants' arguments filed on Apr. 30, 2004, have been fully considered but they are not persuasive.

Applicants assert that the passage refers to "the extent or degree of crosslinking when expressed as a percentage, i.e., from 0% to 100%. This is dimensionless."

However, weight-based, volume-based, mole-based, number-based percentages are all dimensionless values. Applicants have not addressed the question of what is the basis of said percentages. In

other words, it is not clear how the percentages of cross-linking are determined. Accordingly, the objection stands.

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 22 and 23 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Instant claims 22 and 23 are indefinite in the phrase "the charge blocking layer is . . ." (emphasis added) for lack of unambiguous antecedent basis in claim 1, from which claims 22 and 23 depend. Claim 1 recites the presence of a hole blocking layer and an optional charge trapping layer. It is not clear whether the charge blocking layer recited in claims 22 and 23 refers to the hole blocking layer or to another layer.

9. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

10. Claim 19 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

Instant claim 19 recites "a resinous binder comprising polysebacoyl" (emphasis added). Applicants assert that the specification provides support for said binder at page 6, lines 4-15, of the specification.

The originally filed specification does not provide an adequate written description of said binder comprising polysebacoyl. The originally filed specification at page 6, lines 4-15, discloses that a "charge transporting polymer comprises . . . polysebacoyl-TBD (PSEB)" (emphasis added). The originally filed specification at page 10, lines 8-9, discloses that the charge transport layer may comprise a "resinous binder selected from the group consisting of polycarbonates and polystyrenes." The specification at page 15, liens 4-7, discloses that the polymer binder material for the charge transport layer may include "polycarbonates, acrylate polymers, vinyl polymers, cellulose polymers, polyesters, polysiloxanes, polyamides, polyurethanes and epoxies as well as block, random or alternating copolymers thereof." The originally filed specification does not disclose that the charge

transport layer comprises the broad "resinous binder comprising polysebacoyl" as recited in instant claim 19. The "resinous binder comprising polysebacoyl" recited in instant claim 19 is broader than the disclosed polysebacoyl-TBD because it includes a binder resin not comprising polysebacoyl-TBD.

Applicants' arguments filed on Apr. 30, 2004, have been fully considered but they are not persuasive.

Applicants assert that the examiner is not applying the correct standard under 112, first paragraph. Applicants cite the passage in Martin v. Mayer stating that "[i]t is not required that the application describe the claim limitations in greater detail than the invention warrants. The description must be sufficiently clear that persons of skill in the art will recognize that the applicant made the invention having those limitations." Applicants assert that the "present description is sufficiently clear."

However, unlike the statement in Martin v. Mayer, the originally filed specification is "not sufficiently clear that persons of skill in the art will recognize" that applicants had the possession of layers comprising the polymer "polysebacoyl" when the instant application was filed. As discussed in the rejection above, the specification does not disclose the polymer "polysebacoyl," but discloses the polymer "polysebacoyl-TBD." Applicants have not indicated where in the originally filed specification there is antecedent basis for the polymer "polysebacoyl" broadly recited in instant claim 19.

11. Claims 11, 28, and 29 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claims contain subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventors, at the time the application was filed, had possession of the claimed invention.

(1) Instant claims 11, 28, and 29 recite that the component Z in formula (I) is "selected from the group consisting of chloride, bromide, iodide, cyano, alkoxy, acyloxy, aryloxy and combinations thereof" (emphasis added).

The originally filed specification does not provide an adequate written description for the group Z to be a combination of said chemical groups as recited in instant claim 11. The originally filed specification at page 4, line 9, to page 5, line 1, discloses that the component Z is "selected from the group consisting of chloride, bromide, iodide, cyano, alkoxy, for example, of from about 1 to about 5 carbon atoms, acyloxy of, for example, from about 2 to about 6 carbon atoms, aryloxy of, for example, from about 6 to about 10 carbon atoms." The originally filed specification does not disclose that the component Z may be a combination of the chemical groups as recited in instant claim 11. Applicants have not indicated where in the originally filed specification there is antecedent basis for the limitation "combinations thereof" recited in instant claim 11.

(2) Instant claim 29 further recites that the component A in formulas (I) and (III) is "selected from the group consisting of

alkylene, arylene, alkoxycarbonylalkylene, alkoxycarbonylarylene, and combinations thereof" (emphasis added).

The originally filed specification does not provide an adequate written description for the group A to be a combination of said chemical groups as recited in instant claim 29. The originally filed specification at page 4, lines 10-12, discloses that the component A is "selected from the group of divalent linkages, such as alkylene, arylene, alkoxycarbonylalkylene, alkoxycarbonylarylene, and the like." The originally filed specification does not disclose that the component A may be a combination of the chemical groups as recited in instant claim 29. Applicants have not indicated where in the originally filed specification there is antecedent basis for the limitation "combinations thereof" recited in instant claim 29.

12. In the interest of compact prosecution, the examiner has interpreted that the charge blocking layers recited in claims 22 and 23 refer to the hole blocking layer recited in instant claim 1.

The specification at page 12, lines 3-6, discloses that a "hole blocking [is] capable of forming a barrier to prevent hole injection from the conductive layer to the opposite photoconductive layer." US 5,916,720 (Springett) at col. 3, lines 11-14, identifies a "hole" as a "positive charge." The specification at page 17, lines 8-9, discloses that "suitable charge blocking layers may be interposed between the conductive layer and the photogenerating layer." The specification at page 18, lines 6-7, further discloses that "[a] purpose of this layer

[the charge blocking layer] is to prevent charge injection from the substrate during and after charging." Thus, based on the evidence on present record, it appears that the hole blocking layer is a charge blocking layer.

Rejections of claims 22 and 23 based on the examiner's interpretation are set forth infra.

13. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

14. The examiner notes that because US 6,287,737 B1 (Ong'737) qualifies as a reference under a 35 U.S.C. 102(a), as well as 102(e), it is available under 35 U.S.C. 103(a) and 103(c). Rejections over Ong'737 are set forth infra.

15. Claims 1, 2, 7-9, 22-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 4,600,673 (Hendrickson) combined with (1) US 6,210,767 B1 (Knauf), (2) Grant & Hackh's Chemical Dictionary, fifth edition, pp. 293, 503, and 531, (3) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, and (4) US 5,871,877 (Ong'877).

Hendrickson discloses a photoconductive imaging member that meets the compositional limitations recited in the instant claims, but for the presence of a hole blocking layer. Hendrickson's imaging member comprises a conductive substrate, such as an aluminized polyester

substrate, a photoconductive layer, and a topcoat comprising a cured film-forming silicone polymer. Col. 2, lines 45-48; col. 3, lines 36-58; and example 3 at cols. 10-11. The photoconductive layer may have a bilayer structure comprising a charge generating layer and a charge transporting layer. Col. 2, lines 62-67. The crosslinked silicone polymer is obtained by curing (i.e., crosslinking) the material marked or associated with the trademark SYL-OFF 23, which is identified as a silanol terminated polydimethylsiloxane within the scope of formula II disclosed at col. 3, lines 40-59. See col. 10, lines 19-20. SYL-OFF 23 is also identified as a curable "silicone rubber" polymer. See Knauf, col. 3, lines 54-56. Hendrickson discloses that its imaging member provides 100% toner image transfer with a resolution in excess of 200 line pairs/mm. Col. 2, lines 16-18, and example 3.

Hendrickson does not identify the surface of its conductive substrate having a charge injection surface as recited in instant claims 1 and 2. However, Borsenberger teaches that "usually a thin blocking layer is interposed between the electrode [the conductive substrate or layer] and the photoreceptor [e.g., the charge transport layer and the charge generation layer, or a single layer] to prevent charge injection"(emphasis added). Borsenberger, paragraph bridging pages 290 and 291, and Fig. 1. Thus, it appears that the surface of Hendrickson's conductive substrate is a charge injection surface as recited in the instant claims. The burden is on applicants to prove otherwise. In re Fitzgerald, 205 USPQ 594 (CCPA 1980).

Hendrickson further discloses an imaging process comprising the steps of (1) charging its imaging member and (2) imagewise exposing the charged imaging member to light to dissipate the charge on the areas exposed to light. Col. 1, lines 37-43, and example 3, at col. 10, lines 57-59. Thus, Hendrickson demonstrates that its topcoat comprising the crosslinked silicone rubber marked with SYL-OFF 23 is "substantially transparent to activating radiation" as recited in instant claim 26.

Hendrickson does not disclose that its topcoat is electrically insulating or resilient as recited in instant claims 1, 2, and 26. However, as discussed above, Hendrickson's topcoat layer comprises the crosslinked silanol terminated polydimethylsiloxane marked with SYL-OFF 23, which is identified as a silicone rubber. The word "resilient" is commonly defined as "elastic, rebounding." The term "silicone rubber" is usually defined as "a silicone that retains its elastic properties between -50 and +291 [sic: no scale is provided]." See Grant & Hackh's Chemical Dictionary, pages 503 and 531. Thus, because a silicone rubber is defined as being elastic, it is reasonable to conclude that Hendrickson's crosslinked silicone rubber is also "resilient." The burden is on applicants to prove otherwise. Fitzgerald, supra.

Furthermore, Hendrickson's crosslinked silicone rubber does not appear to comprise any groups that would render it electrically conductive. Thus, it is reasonable to presume that Hendrickson's

topcoat is also electrically insulating. The burden is on applicants to prove otherwise.

Instant claim 24 recites that the crosslinked silicone rubber prior to crosslinking is "dimethyl polysiloxane hydrolyzate." The term "hydrolyzate" is usually applied to a substance that has been obtained by hydrolysis. Hydrolysis is a decomposition reaction caused by water resulting in the formation of a hydroxyl group. See Grant & Hackh's Chemical Dictionary, page 293. Thus, the dimethyl polysiloxane hydrolyzate recited in instant claim 24 is described in product-by-process format. Neither Hendrickson nor Knauf discloses that SYL-OFF 23 is a dimethylpolysiloxane hydrolyzate. However, as discussed supra, Hendrickson identifies SYL-OFF 23 as a silanol (-SiOH) terminated polydimethylsiloxane. In other words, SYL-OFF 23 has a terminal hydroxyl group. Thus, SYL-OFF 23 appears to be the same or similar to the dimethyl polysiloxane hydrolyzate recited in instant claim 24. The burden is on applicants to prove otherwise. In re Marosi, 218 USPQ 289 (Fed. Cir. 1983); In re Thorpe, 227 USPQ 964 (Fed. Cir. 1985); MPEP 2113.

As discussed supra, Hendrickson does not disclose that its imaging member comprises a hole blocking layer as recited in the instant claims. However, as discussed supra, the use of a blocking layer interposed between the conductive substrate and the photoconductive layer (e.g., the charge transport layer and the charge generation layer) to prevent charge injection is well-known in the

art. See Borsenberger, paragraph bridging pages 290 and 291, and Fig. 1.

Ong'877 teaches a hole-blocking layer comprising a crosslinked silicone polymer. Col. 3, line 65, to col. 5, line 18. The hole-blocking layer has a thickness of about 2 to 2.5 μm, which is within the thickness range recited instant claims 8, 22, and 23. Col. 20, lines 60-66. The crosslinked silicone polymer is obtained by reacting the polymer III-a with 3-aminopropyltrimethoxysilane. Col. 8, lines 1-25 and col. 20, lines 60-66. According to Ong'877, the crosslinking reaction involves the "hydrolysis of the silyl groups of organosilane (II) [i.e., 3-aminopropyltrimethoxysilane] and the polymer III [i.e., polymer III-a] to the hydroxysilyl functions followed by condensation to form the siloxane (Si-O-Si) bonds." Col. 16, line 49, to col. 17, line 30. Thus, the hole blocking layer disclosed by Ong'877 comprises a "hydrolyzed silane" that meets the compositional limitations as recited in instant claims 1 and 2. The crosslinked silicone polymer also meets the "silicones" and "polysiloxane" compositional limitations recited in instant claim 22. Ong'877 further discloses that the hole-blocking layer may have a thickness of about 0.1 to about 5 μm. Col. 5, lines 20-21. The thickness value of "about 0.1 μm" is within the range of about 0.005 to 0.3 μm recited in instant claim 9 and is within the range of "about 20 Angstroms to about 2 microns" recited in instant claim 23. Accordingly to Ong'877, its hole blocking layer is durable and solvent resistant. Col. 3, lines 58-59. Ong'877 shows that its hole blocking

layer shows effective blockage of charge injection, which significantly lowers the dark decay in imaging members compared to imaging members not comprising its hole blocking layer. See the table at col. 12 and accompanying text.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Borsenberger and Ong'877, to incorporate Ong'877's hole blocking layer between the conductive substrate and the photoconductive layer - a bilayer structure comprising a charge generation layer and a charge transport layer, in the imaging member disclosed by Hendrickson, such that resultant imaging member comprising the hole blocking layer between the conductive substrate and the charge transport layer, because that person would have had a reasonable expectation of successfully obtaining an electrophotographic imaging member having the benefits disclosed by Ong'877.

16. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hendrickson combined with (1) Knauf, (2) Grant & Hackh's Chemical Dictionary, fifth edition, pp. 293, 503, and 531, (3) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, and (4) Ong'877, as applied to claim 1 above, further combined with US 4,664,995 (Horgan).

Hendrickson combined with Ong'877 and the other cited references renders obvious an electrophotographic imaging member as described in paragraph 15 above, which is incorporated herein by reference.

Hendrickson does not exemplify a charge injection surface comprising gold, graphite, or carbon as recited in the instant claims. However, as discussed in paragraph 15, Hendrickson discloses a conductive substrate comprising an aluminized polyester substrate. Hendrickson further teaches that the conductive substrate can be any system well known in the art, such as support insulating layers comprising a thin conductive coating. Col. 2, lines 49-55.

Horgan discloses that conductive coatings used to make conductive substrates used in electrophotographic imaging members typically include aluminum, titanium, gold, carbon black, graphite, and the like. Col. 3, line 68, to col. 4, line 3.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Horgan, to use an equivalent conductive coating comprising at least any of gold, carbon black, or graphite as the conductive coating in the imaging member rendered obvious over the combined teachings of Hendrickson, Ong'877, and the other cited references, because that person would had a reasonable expectation of successfully obtaining an electrophotographic imaging member having the benefits disclosed by both Hendrickson and Ong'877.

17. Applicants' arguments filed on Apr. 30, 2004, with respect to the rejections over Hendrickson in paragraphs 15 and 16 above have been fully considered but they are not persuasive.

Applicants assert that Hendrickson does not disclose the combination of a hole blocking layer with the other layers recited in

instant claims 1 and 2. Applicants assert that neither Hendrickson nor Borsenberger teaches or suggests a hole blocking layer comprising a hydrolyzed silane as now recited in instant claims 1 and 2. Applicants further assert that Ong'877 does not teach or suggest an imaging member comprising a cross-linked rubber or the overcoat layer recited in instant claims 1 and 2. Applicants also assert that the "Examiner has failed to identify any teaching from the collection of cited prior art for selectively combining the Hendrickson, Borsenberger and Ong art, in the manner that the Examiner has done."

In response to applicants' arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

As discussed in the rejection in the last office action re-mailed on Feb. 10, 2004, paragraph 15, that is substantially repeated in paragraph 15, supra, Hendrickson teaches an imaging member that comprises all of the elements recited in the instant claims, but for the presence of the hole blocking layer. See paragraph 15 above, pages 15-18. Borsenberger is cited to show that it is well known in the art to use a hole blocking layer in electrophotographic imaging members to prevent the injection of charge from the conductive support to the photoconductive layer. See paragraph 15 above, the paragraph bridging pages 18 and 19. Ong'877 teaches a particular hole blocking layer that is within the hole blocking layer limitations recited in

the instant claims, and provides reason, suggestion, and motivation of using its hole blocking layer in electrophotographic imaging members. See paragraph 15 above, pages 19-20. Thus, the examiner has identified where in the references there is reason, motivation, and suggestion for a person having ordinary skill in the art to use the hole blocking layer disclosed by Ong'877 in the imaging member disclosed by Hendrickson.

Applicants further assert that cited art fails to teach the limitations recited in instant claims 7-9, 22-24, and 26. Applicants assert that the examiner has failed to present any reasons for the rejection of dependent claims 7-8 and 23.

Applicants' assertions are without merit.

(1) Although the rejection in paragraph 15 above does not explicitly disclose that Hendrickson's substrate meets the substrate limitation recited in dependent claim 7. The rejection states that "Hendrickson's imaging member comprises a conductive substrate, such as an aluminized polyester substrate." Furthermore, Hendrickson at col. 2, lines 49-55, clearly teaches that the conductive substrate may be in form of metal blocks or sheets. In this art, substrates that are flat meet the "plate" limitation recited in instant claim 7.

(2) The rejection in paragraph 15, supra, at page 19, lines 4-7 and 19-22, addresses the hole blocking layer limitations recited in instant claims 8 and 9. At those cites, the rejection provides column and line numbers, which were presented in the office action re-mailed on Feb. 10, 2004, paragraph 15, page 22, lines 9-15, as to where

Ong'737 teaches a hole blocking layer comprising the limitations recited in instant claims 8 and 9.

(3) The rejection in paragraph 15 above at page 19, lines 4-7 and 17-23, addresses the "charge blocking layer" limitations recited in instant claims 22 and 23. The "charge blocking layer" limitations recited in those claims were not addressed in the office action re-mailed on Feb. 10, 2004, because the previously entered claim 1 filed on Sep. 12, 2003, from which claims 22 and 23 depend, recited that the charge blocking layer was an "optional" layer. Because the charge blocking layer was "optional," the references did not have to disclose or suggest the "charge blocking layer" limitations recited in claims 22 and 23 to render those claims unpatentable.

(4) The rejection in the last office action re-mailed on Feb. 10, 2004, paragraph 15, pages 20-21, that is substantially repeated in paragraph 15, supra, pages 17-18, addresses the limitations recited in instant claims 24 and 26. The rejection explains why it is reasonable to conclude that the silicone rubber containing overcoat layer disclosed by Hendrickson has the properties recited in instant claims 24 and 26. Applicants have not met their burden to shown otherwise.

Accordingly, for the reasons discussed in the rejections in paragraphs 15 and 16 above, the imaging members recited in the instant claims are obvious over the cited prior art.

18. Claims 1, 2, 6-9, 11-16, 20-24, 26, 28, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 6,287,737 B1 (Ong'737) combined with (1) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, (2) US 5,124,220 (Brown), (3) Hendrickson, (4) Knauf, and (5) Grant & Hackh's Chemical Dictionary, fifth edition, pages 293, 503, and 531.

Ong'737 discloses a photoconductive imaging member comprising in order, (1) a conductive substrate, (2) a hole-blocking layer, (3) an adhesion layer, (4) a charge generation layer, and (5) a charge transport layer. See example IV at cols. 29-30.

(1) The substrate comprises a 75-μm thick titanized MYLAR substrate. Col. 29, line 44. The thickness is within the range of about 75 to about 275 μm recited in instant claim 6. Ong'737 further discloses that the substrate may be flexible, seamless, or rigid, and in the form of a plate, a cylinder, a scroll, or an endless belt, all of which are within the limitations recited instant claims 6 and 7. See Ong'737, col. 25, line 53, to col. 26, line 13.

(2) The hole-blocking layer comprises a crosslinked polymer that is within the compositional limitation of formula III recited in instant claims 11, 28, and 29. The crosslinked polymer is obtained by reacting the polymer IV in example II with 3-aminopropyl-trimethoxysilane. According to Ong'737, the crosslinking reaction involves the "hydrolysis of the silyl groups of organosilane (II) [i.e., 3-aminopropyl-trimethoxysilane] and the polymer IV to the hydroxysilyl functions followed by condensation to form the siloxane

(Si-O-Si) bonds." Col. 25, lines 9-50. Thus, the hole blocking layer disclosed by Ong'787 comprises a "hydrolyzed silane" that meets the compositional limitations as recited in instant claims 1 and 2. The crosslinked polymer also meets the "silicones" and "polysiloxane" compositional limitations recited in instant claim 22. The hole-blocking layer has a thickness of about 0.5 to 0.7 μm, which is within the thickness range recited instant claims 8, 22, and 23. Col. 29, lines 45-51. Ong'737 further discloses that the hole-blocking layer may have a thickness of about 0.001 to about 5 μm, preferably from about 0.1 to 5 μm. Col. 8, lines 22-25. The thickness value of "about 0.1 μm" is within the range of about 0.005 to 0.3 μm recited in instant claim 9.

(3) The adhesive layer has a thickness of 0.05 μm, which is within the range recited in instant claim 12. Col. 29, lines 52-55.

(4) The charge generation layer comprises hydroxygallium phthalocyanine dispersed in a film forming binder, which is within the compositional limitation recited in instant claim 20. The layer has a thickness of 0.2 μm, which is within the range of about 0.2 to 0.7 μm recited in instant claim 21. Col. 29, lines 55-60.

(5) The charge transport layer comprises aryl amine charge transport molecules that are within the compositional limitations of the formula recited in instant claim 14 and that are dispersed in a binder resin. The aryl amine charge transport molecules have a methyl substituent that meets the compositional limitations recited in instant claims 15 and 16, which depend from claim 14. Col. 29,

lines 60-65. Ong'737 discloses that the binder resin is a highly insulating and transparent resin. Col. 27, lines 40-41 and 54-62.

Ong'737 discloses that its photoconductive imaging member has an "extended life" and "maintains conductivity for longer periods." Col. 3, lines 24-31.

Ong'737 does not disclose that the titanized surface of its substrate is a charge injecting surface. However, Borsenberger teaches that "usually a thin blocking layer is interposed between the electrode [the conductive substrate or layer] and the photoreceptor [e.g., the charge transport layer and the charge generation layer, or a single layer] to prevent charge injection" (emphasis added). Borsenberger, paragraph bridging pages 290 and 291, and Fig. 1. Ong'737's layer 1, the conductive substrate or layer, has a thin hole blocking layer 2 interposed between the "electrode" and the photoreceptor (charge generation layer 4 and the charge transport layer 5). Thus, it appears that the titanized surface of Ong'737's conductive substrate is a charge injection surface as recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Ong'737 does not disclose that its imaging member further comprises an overcoat layer or a crosslinked silicone rubber as recited in instant claims 1 and 2.

Brown discloses a bilayer topcoat for organic photoconductive imaging members. Brown discloses that the bilayer topcoat comprises a polymeric barrier layer and a cross-linked silicone polymeric release

layer. Col. 3, lines 60-63. Brown does not limit the type of photoconductive imaging member used. See col. 4, lines 45-47, which discloses that "organic photoconductive materials are well-known in the art, and the present invention is applicable to all such organic photoconductors." The crosslinked silicone polymeric release layer is the crosslinked material marked or associated with the trademark SYL-OFF 23 described in Hendrickson. Col. 6, lines 20-24. The discussion of Hendrickson's release layer in paragraph 15, supra, is incorporated herein by reference. As discussed in paragraph 15, supra, the material marked SYL-OFF 23 is identified as a curable silicone rubber, and the releasing layer (or topcoat) comprising SYL-OFF 23 is "substantially transparent to activating radiation." For the reasons discussed in paragraph 15, supra, it is reasonable to conclude that the release layer disclosed by Brown has the properties recited in instant claims 1, 2, and 26, and that SYL-OFF 23 appears to be the same as the product recited in instant claim 24. The burden is on applicants to prove otherwise.

Brown discloses that its bilayer topcoat improves the removal of image toner as well as the excess or residual toner from the surface of the imaging member. Col. 4, lines 14-17. According to Brown, its bilayer topcoat protects the photoconductive imaging member and extends its useful life in imaging processes, in particular, in processes involving liquid toners and thermally assisted toner transfer steps. Col. 1, lines 7-10, and col. 3, lines 64-67. The barrier layer protects the essential properties of both the organic

photoconductor layer and the polymer release coating "by preventing or inhibiting the transport of material between these layers both during the manufacture of the photoconductor element and during its use within the electrophotographic process." Col. 4, lines 1-7.

It would have been obvious for a person having ordinary skill in the art to coat Brown's bilayer on the surface of the photoconductive imaging member disclosed by Ong'737, because that person would have had a reasonable expectation of successfully obtaining a photoconductive imaging member having the benefits disclosed by Brown.

19. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong'737 combined with (1) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, (2) Brown, (3) Hendrickson, (4) Knauf, and (5) Grant & Hackh's Chemical Dictionary, fifth edition, pages 293, 503, and 531, as applied to claim 1 above, further combined with Horgan.

Ong'737 combined with Brown and the other cited references renders obvious a photoconductive imaging member as described in paragraph 18 above, which is incorporated herein by reference.

Ong'737 does not exemplify a charge injection surface comprising gold, graphite, or carbon as recited in the instant claims. However, as discussed in paragraph 18, Ong'737 discloses a conductive substrate comprising a MYLAR substrate comprising a titanized conductive surface layer. Ong'737 does not limit the type of conductive surface layer used in its conductive substrate. Col. 25, lines 60-64.

Horgan discloses that conductive coatings used to make conductive substrates used in electrophotographic imaging members typically include aluminum, titanium, gold, carbon black, graphite, and the like. Col. 3, line 68, to col. 4, line 3.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Horgan, to use an equivalent conductive coating comprising at least any of gold, carbon black, or graphite as the conductive surface coating in the imaging member rendered obvious over the combined teachings of Ong'737, Brown, and the other cited references, because that person would had a reasonable expectation of successfully obtaining an electrophotographic imaging member having the benefits disclosed by both Ong'737 and Brown.

20. Applicants' arguments filed on Apr. 30, 2004, with respect to the rejections set forth in paragraphs 18 and 19 above have been fully considered but they are not persuasive.

Applicants assert that the cited prior art fails to teach an imaging member having the features as recited in instant claims 1 and 2. Applicants assert that the examiner has failed to identify any teachings in the cited art of these features. Applicants further assert that the examiner has failed to provide any explanation or theories as to why dependent claims 11, 13, 15, 16, 20, 22, and 23 are unpatentable over the prior art.

The record does not support applicants' criticisms. As discussed in the rejection in the last office action re-mailed on Feb. 10, 2004,

paragraph 18, pages 25-27, that is substantially repeated in paragraph 18, supra, Ong'737 teaches an imaging member that comprises all of the elements recited in the instant claims, but for the presence of the cross-linked silicone rubber and overcoat layer. See the rejection in paragraph 18 above, pages 25-27, which describes the imaging member disclosed by Ong'737. Brown teaches the use of a bilayer topcoat comprising a cross-linked silicone rubber that meets the overcoat layer and cross-linked silicone rubber limitations recited in the instant claims and provides reason, suggestion, and motivation for using its bilayer topcoat in electrophotographic imaging members. See paragraph 18 above, pages 27-29. Contrary to applicants' statement that the examiner does not apply the art of Knauf and Grant & Hackh's, the rejection does apply the teachings in those references as they relate to the discussion of Hendrickson's release layer. As stated in the rejection in paragraph 18 above, the discussion of Hendrickson's release layer in paragraph 15 is incorporated by reference into the rejection in paragraph 18. See paragraph 18 above, page 28. Thus, the examiner has identified where in the references disclose the various features recited in instant claims 1 and 2, and where in the references there is reason, motivation, and suggestion for a person having ordinary skill in the art to use the bilayer topcoat layer disclosed by Brown in the imaging member disclosed by Ong'737.

Moreover, applicants' assertions regarding the alleged failure of the examiner to address the limitations recited in instant claims 11, 13, 15, 16, 20, 22 and 23 are without merit.

(1) Regarding claim 11, the rejection in paragraph 18, supra, pages 25-26, item (2), provides column and line numbers, which were presented in the last office action re-mailed on Feb. 10, 2004, paragraph 18, page 26, lines 10 and 13, as to where Ong'737 teaches a hole blocking layer composition as recited in instant claim 11.

(2) Regarding claims 13, 15, and 16, the rejection in paragraph 18 above, pages 26 and 27, item (5), points out that the aryl amine charge transporting molecules in the charge transport layer disclosed by Ong'737 meet the limitations recited in instant claims 14, 15, and 16. Because claim 14 is dependent on claim 13, the aryl amine limitation recited in claim 13 is met.

(3) The rejection in paragraph 18 above in the paragraph bridging pages 25 and 26, item (2), addresses the "charge blocking layer" limitations recited in instant claims 22 and 23. The "charge blocking layer" limitations recited in those claims were not addressed in the office action re-mailed on Feb. 10, 2004, because the previously entered claim 1 filed on Sep. 12, 2003, from which claims 22 and 23 depend, recited that the charge blocking layer was an "optional" layer. Because the charge blocking layer was "optional," the references did not have to disclose or suggest the "charge blocking layer" limitations recited in claims 22 and 23 to render those claims unpatentable.

Accordingly, for the reasons discussed in the rejection in paragraph 18 above, the imaging members recited in the instant claims are obvious over the cited prior art.

With respect to the rejection set forth in paragraph 19 above, applicants assert that the "collection . . . including seven (7) various patents or books, actually illustrates the weakness and deficiency of the present rejection. Applicants assert that the examiner has failed to explain or identify why any teaching in the art itself supporting such an "intricate combination" of selective passages from the various cited patents and books.

Reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. See *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991).

The references of Borsenberger, Hendrickson, Knauf, and Grant & Hackh's are cited as evidence to show that the components in Ong'737 and Brown have the properties recited in instant claims. Moreover, the rejection in paragraph 19 above, which incorporates the description of the imaging member set out in paragraph 18 above, indicates where in the references of Ong'737, Brown, and Horgan there is support for the various components recited in the instant claims. The rejection in paragraph 18 above indicates where in Brown there is reason, motivation, and suggestion to use Brown's bilayer topcoat in the imaging member disclosed by Ong'737. The rejection in paragraph 19 above indicates where there is reason, motivation, and suggestion in Ong'737 to use the conductive coatings of Horgan in the

imaging member rendered obvious over the combined teachings of Ong'737, Brown, and the other cited references.

Accordingly, for the reasons discussed in the rejection in paragraph 19 above, the imaging members recited in instant claims 4 and 5 are obvious over the cited prior art.

21. Claims 1, 2, 6-9, 12-16, 20-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,871,877 (Ong'877) combined with (1) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, (2) Brown, (3) Hendrickson, (4) Knauf, and (5) Grant & Hackh's Chemical Dictionary, fifth edition, pages 293, 503, and 531.

Ong'877 discloses a photoconductive imaging member comprising in order, (1) a conductive substrate, (2) a hole-blocking layer, (3) an adhesion layer, (4) a charge generation layer, and (5) a charge transport layer. See example III at cols. 20-21.

(1) The conductive substrate comprises a 75-μm thick titanized MYLAR substrate. Col. 20, line 59. The thickness is within the range of about 75 to about 275 μm recited in instant claim 6. Ong'877 further discloses that the substrate may be flexible, seamless, or rigid, and in the form of a plate, a cylinder, a scroll, or an endless belt, all of which are within the limitations recited instant claims 6 and 7. See Ong'877, col. 17, lines 45-61.

(2) The hole-blocking layer comprises a crosslinked polymer. The hole-blocking layer has a thickness of about 2 to 2.5 μm, which is

within the thickness range recited instant claims 8, 22, and 23. Col. 20, lines 60-66. The crosslinked silicone polymer is obtained by reacting the polymer III-a with 3-aminopropyltrimethoxysilane. Col. 8, lines 1-25 and col. 20, lines 60-66. According to Ong'877, the crosslinking reaction involves the "hydrolysis of the silyl groups of organosilane (II) [i.e., 3-aminopropyltrimethoxysilane] and the polymer III [i.e., polymer III-a] to the hydroxysilyl functions followed by condensation to form the siloxane (Si-O-Si) bonds." Col. 16, line 49, to col. 17, line 30. Thus, the hole blocking layer disclosed by Ong'877 comprises a "hydrolyzed silane" that meets the compositional limitations as recited in instant claims 1 and 2. The crosslinked silicone polymer also meets the "silicones" and "polysiloxane" compositional limitations recited in instant claim 22. Ong'877 further discloses that the hole-blocking layer may have a thickness of about 0.1 to about 5 μm. Col. 5, lines 20-21. The thickness value of "about 0.1 μm" is within the range of about 0.005 to 0.3 μm recited in instant claim 9 and is within the range of "about 20 Angstroms to about 2 microns" recited in instant claim 23.

(3) The adhesive layer has a thickness of 0.05 μm, which is within the range recited in instant claim 12. Col. 20, line 67, to col. 21, line 2.

(4) The charge generation layer comprises hydroxygallium phthalocyanine dispersed in a film forming binder, which is within the compositional limitation recited in instant claim 20. The layer has a

thickness of 0.2 μm, which is within the range of about 0.2 to 0.7 μm recited in instant claim 21. Col. 21, lines 3-8.

(5) The charge transport layer comprises an aryl amine charge transport molecule that is within the compositional limitation of the formula recited in instant claim 14, which is dispersed in a binder resin. The aryl amine charge transport molecule has a methyl substituent that meets the compositional limitations recited in instant claims 15 and 16, which depend from claim 14. Col. 21, lines 8-12. Ong'877 discloses that the binder resin is a highly insulating and transparent resin. Col. 19, lines 15-16 and 28-40.

Ong'877 discloses that its photoconductive imaging member has photosensitivity to near infrared radiations and has improved coating characteristics, "wherein the charge transport molecules do not diffuse, or there is minimum diffusion thereof into the photogenerating layer." Col. 3, lines 47-55.

Ong'877 does not identify the titanized surface layer as a charge injection surface as recited in instant claims 1 and 2. However, Borsenberger teaches that "usually a thin blocking layer is interposed between the electrode [the conductive substrate or layer] and the photoreceptor [e.g., the charge transport layer and the charge generation layer, or a single layer] to prevent charge injection" (emphasis added). Borsenberger, paragraph bridging pages 290 and 291, and Fig. 1. Ong'877's layer (1), the conductive substrate or layer, has a thin hole blocking layer (2) interposed between the "electrode" and the photoreceptor (charge generation layer (4) and the charge

transport layer (5)). Thus, it appears that the titanized surface layer of Ong'877's conductive substrate is a charge injection surface as recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Ong'877 does not disclose that its imaging member further comprises an overcoat layer or a crosslinked silicone rubber as recited in instant claims 1 and 2.

Brown discloses a bilayer topcoat for organic photoconductive imaging members. The discussion of Brown in paragraph 18 above is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to coat Brown's bilayer on the surface of the photoconductive imaging member disclosed by Ong'877, because that person would have had a reasonable expectation of successfully obtaining a photoconductive imaging member having the benefits disclosed by Brown.

22. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ong'877 combined with (1) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, (2) Brown, (3) Hendrickson, (4) Knauf, and (5) Grant & Hackh's Chemical Dictionary, fifth edition, pages 293, 503, and 531, as applied to claim 1 above, further combined with Horgan.

Ong'877 combined with Brown and the other cited references renders obvious a photoconductive imaging member as described in paragraph 21 above, which is incorporated herein by reference.

Ong'877 does not exemplify a charge injection surface comprising gold, graphite, or carbon as recited in the instant claims. However, as discussed in paragraph 21, Ong'877 discloses a conductive substrate comprising a MYLAR substrate comprising a titanized conductive surface layer. Ong'877 does not limit the type of conductive surface layer used in its conductive substrate. Col. 17, lines 41-45.

Horgan discloses that conductive coatings used to make conductive substrates used in electrophotographic imaging members typically include aluminum, titanium, gold, carbon black, graphite, and the like. Col. 3, line 68, to col. 4, line 3.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Horgan, to use an equivalent conductive coating comprising at least any of gold, carbon black, or graphite as the conductive surface coating in the imaging member rendered obvious over the combined teachings of Ong'877, Brown, and the other cited references, because that person would had a reasonable expectation of successfully obtaining an electrophotographic imaging member having the benefits disclosed by both Ong'877 and Brown.

23. Applicants' arguments filed on Apr. 30, 2004, with respect to the rejections over Ong'877 set forth in paragraphs 21 and 22 above have been fully considered but they are not persuasive.

Applicants assert that the cited prior art fails to teach an imaging member having the features as recited in instant claims 1 and 2. Applicants assert that the examiner has failed to identify any

teachings in the cited art of these features. Applicants further assert that the examiner has failed to provide any explanation or theories as to why dependent claims 13, 15, 16, 20, 22, 23, 24, and 26 are unpatentable over the prior art.

The record does not support applicants' allegations. As discussed in the rejection in the last office action re-mailed on Feb. 10, 2004, paragraph 20, pages 31-33, that is substantially repeated in paragraph 21, supra, Ong'877 teaches an imaging member that comprises all of the elements recited in the instant claims, but for the presence of the cross-linked silicone rubber and overcoat layer. See the rejection in paragraph 21 above, pages 34-37, which describes the imaging member disclosed by Ong'877. Brown teaches the use of a bilayer topcoat comprising a cross-linked silicone rubber that meets the overcoat layer and cross-linked silicone rubber limitations recited in the instant claims and provides reason, suggestion, and motivation for using its bilayer topcoat in electrophotographic imaging members. See paragraph 21 above, page 37, which incorporates the discussion of Brown in paragraph 18 by reference. Contrary to applicants' statement that the examiner does not apply the art of Hendrickson, Knauf, and Grant & Hackh's, the rejection does apply the teachings in those references as they relate to the discussion of Brown's bilayer topcoat. As stated in the rejection in paragraph 21 above the discussion of Brown's bilayer topcoat in paragraph 18 is incorporated by reference into the rejection in paragraph 21. See paragraph 21 above, page 37. The

discussion of Brown's bilayer topcoat in paragraph 18 further incorporates by reference the discussion of Hendrickson's release layer in paragraph 15. Thus, the examiner has identified where in the references disclose the various features recited in instant claims 1 and 2, and where in the references there is reason, motivation, and suggestion for a person having ordinary skill in the art to use the bilayer topcoat layer disclosed by Brown in the imaging member disclosed by Ong'877.

Moreover, applicants' assertions regarding the alleged failure of the examiner to address the limitations recited in instant claims 13, 15, 16, 20, 22, 23, 24, and 26 are without merit.

(1) Regarding claims 13, 15, and 16, the rejection in paragraph 21 above, page 36, item (5), points out that the aryl amine charge transporting molecules in the charge transport layer disclosed by Ong'877 meet the limitations recited in instant claims 14, 15, and 16. Because claim 14 is dependent on claim 13, the aryl amine limitation recited in claim 13 is met. The description of the charge transport layer in Ong'877 was discussed in the last office action re-mailed on Feb. 10, 2004, paragraph 20, page 32.

(2) Regarding claim 20, the rejection in paragraph 21 above, pages 35-36, item (4), points out that the charge generation layer disclosed by Ong'877 comprises a hydroxygallium phthalocyanine dispersed in a film forming binder. The description of the charge generation layer in Ong'877 was discussed in the last office action re-mailed on Feb. 10, 2004, paragraph 20, page 32.

(3) The rejection in paragraph 21 above in the paragraph bridging pages 34 and 35, item (2), addresses the "charge blocking layer" limitations recited in instant claims 22 and 23. The "charge blocking layer" limitations recited in those claims were not addressed in the office action re-mailed on Feb. 10, 2004, because the previously entered claim 1 filed on Sep. 12, 2003, from which claims 22 and 23 depend, recited that the charge blocking layer was an "optional" layer. Because the charge blocking layer was "optional," the references did not have to disclose or suggest the "charge blocking layer" limitations recited in claims 22 and 23 to render those claims unpatentable.

(4) Regarding claims 24 and 26, the rejection in paragraph 21 above, at page 37, incorporates the discussion of Brown's bilayer topcoat in paragraph 18 above by reference. Thus, the rejection in paragraph 21 above does explain why the bilayer topcoat of Brown meets the limitations recited in instant claims 24 and 26.

Accordingly, for the reasons discussed in the rejection in paragraph 21 above, the imaging members recited in the instant claims are obvious over the cited prior art.

With respect to the rejection set forth in paragraph 22 above, applicants assert that the examiner has failed to identify any teaching in the cited art supporting the particular art combination. This criticism has no support in the record.

The rejections in paragraphs 21 and 22 above indicate where in the references of Ong'877, Brown, and Horgan there is support for the

various features recited in the instant claims. The rejection in paragraph 21 above indicates where in Brown there is reason, motivation, and suggestion to use Brown's bilayer topcoat in the imaging member disclosed by Ong'877. The rejection in paragraph 22 above, which incorporates the description of the imaging member set out in paragraph 21 above, indicates where there is reason, motivation, and suggestion in Ong'877 to use the conductive coatings of Horgan in the imaging member rendered obvious over the combined teachings of Ong'877, Brown, and the other cited references.

Accordingly, for the reasons discussed in the rejection in paragraph 22 above, the imaging members recited in instant claims 4 and 5 are obvious over the cited prior art.

24. Claims 1, 2, 6-9, 12-18, 21-24, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 5,316,880 (Pai) combined with, (1) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, (2) Brown, (3) Hendrickson, (4) Knauf, and (5) Grant & Hackh's Chemical Dictionary, fifth edition, pages 293, 503, and 531.

Pai discloses a photoconductive imaging member comprising (1) a conductive substrate, (2) a hole-blocking layer, (3) an adhesion layer, (4) a charge generation layer, and (5) a charge transport layer. See example VII at cols. 24-25.

(1) The conductive substrate comprises a polyethylene terephthalate film coated with a titanium layer. Col. 24,

lines 46-49. Pai further discloses that the substrate may be an endless flexible belt, a web, a rigid cylinder, or a sheet, all of which are within the limitations recited instant claims 6 and 7. See Pai, col. 5, lines 10-13. The flexible belt may have a thickness of about 125 μm, which is within the range recited in instant claim 6. Col. 5, lines 16-17.

(2) The hole-blocking layer comprises a hydrolyzed gamma aminopropyltriethoxysilane. The hole-blocking layer has a thickness of 100 Angstroms (i.e., 0.01 μm). Col. 24, lines 50-53. The hydrolyzed gamma aminopropyltriethoxysilane meets the "hydrolyzed silane" recited in instant claims 1 and 2. The hydrolyzed silane also meets the "organosilanes" and "silicones" compositional limitations recited in instant claim 22. The thickness is within the ranges recited in instant claims 8, 9, 22, and 23.

(3) The adhesive layer has a thickness of 50 Angstroms (i.e., 0.005 μm), which is within the range recited in instant claim 12. Col. 24, lines 53-55.

(4) The charge generation layer comprises a vanadyl phthalocyanine dispersed in a film forming binder. The layer has a thickness of about 1 μm, which reads on the thickness of "about 0.7 μm" recited in instant claim 21. Col. 24, lines 56-61. Pai also discloses that the charge generation layer may have a preferred thickness of about 0.3 to about 3 μm. Col. 7, lines 58-59. The thickness of about 0.3 μm is within the range of about 0.2 to about 0.7 μm recited in instant claim 21.

(5) The charge transport layer comprises the arylamine charge transport molecules N,N'-diphenyl-N,N'-bis(3-methylphenyl)-(1,1'-biphenyl)-4,4'-diamine, dispersed in a polyethercarbonate charge transport polymer. Col. 24, lines 60-66. The arylamine charge transport component meets the compositional limitations recited in instant claims 13-16. The polyethercarbonate is within the compositional limitations recited in instant claims 17 and 18. The charge transport layer has a thickness of 30 μm, which is within the thickness range recited in instant claim 16.

Pai discloses that its photoconductive imaging member exhibits improved imaging operation during extended image cycling, integrity of layers underlying the charge transport layer, and high charge carrier mobilities. Col. 4, lines 10-27.

Pai does not identify the titanium surface layer as a charge injection surface as recited in instant claims 1 and 2. However, Borsenberger teaches that "usually a thin blocking layer is interposed between the electrode [the conductive substrate or layer] and the photoreceptor [e.g., the charge transport layer and the charge generation layer, or a single layer] to prevent charge injection"(emphasis added). Borsenberger, paragraph bridging pages 290 and 291, and Fig. 1. Pai's layer (1), the conductive substrate or layer, has a thin hole blocking layer (2) interposed between the "electrode" and the photoreceptor (charge generation layer (4) and the charge transport layer (5)). Thus, it appears that the titanium surface layer of Pai's conductive substrate is a charge

injection surface as recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Pai does not disclose that its imaging member further comprises an overcoat layer or a crosslinked silicone rubber as recited in instant claims 1 and 2. However, Pai discloses that its imaging member may comprise an overcoat layer to improve the resistance to abrasion. Col. 20, lines 54-55. Pai further discloses that the overcoating layer is well-known in the art. Col. 20, lines 58-59.

Brown discloses bilayer topcoat for organic photoconductive imaging members. The discussion of Brown in paragraph 18, supra, is incorporated herein by reference.

It would have been obvious for a person having ordinary skill in the art to coat Brown's bilayer on the surface of the photoconductive imaging member disclosed by Pai, because that person would have had a reasonable expectation of successfully obtaining a photoconductive imaging member having the benefits disclosed by Brown.

25. Claims 4 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pai combined with (1) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, (2) Brown, (3) Hendrickson, (4) Knauf, and (5) Grant & Hackh's Chemical Dictionary, fifth edition, pages 293, 503, and 531, as applied to claim 1 above, further combined with Horgan.

Pai combined with Brown and the other cited references renders obvious a photoconductive imaging member as described in paragraph 24 above, which is incorporated herein by reference.

Pai does not exemplify a charge injection surface comprising gold, graphite, or carbon as recited in the instant claims. However, as discussed in paragraph 24, Pai discloses a conductive substrate comprising a polyethylene terephthalate film coated with a titanium surface layer. Pai does not limit the type of conductive surface layer used in its conductive substrate. Col. 5, lines 35-51.

Horgan discloses that conductive coatings used to make conductive substrates used in electrophotographic imaging members typically include aluminum, titanium, gold, carbon black, graphite, and the like. Col. 3, line 68, to col. 4, line 3.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Horgan, to use an equivalent conductive coating comprising at least any of gold, carbon black, or graphite as the conductive surface coating in the imaging member rendered obvious over the combined teachings of Pai, Brown, and the other cited references, because that person would had a reasonable expectation of successfully obtaining an electrophotographic imaging member having the benefits disclosed by both Pai and Brown.

26. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Pai combined with (1) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, (2) Brown, (3) Hendrickson,

(4) Knauf, and (5) Grant & Hackh's Chemical Dictionary, fifth edition, pages 293, 503, and 531, as applied to claim 15 above, further combined with US 5,356,743 (Yanus).

Pai combined with Brown and the other cited references renders obvious a photoconductive imaging member as described in paragraph 24 above, which is incorporated herein by reference.

Pai does not exemplify a charge transport layer comprising a binder comprising polysebacoyl as recited in instant claim 19. However, as discussed in paragraph 24, supra, Pai discloses a charge transport layer comprising an aryl amine compound meeting the limitations recited in instant claim 15 that is dispersed in an aryl amine-containing charge transport polymer. Pai does not limit the type of charge transport polymer used in its charge transport layer. Pai discloses that "[a]ny suitable charge transporting polymer may be utilized in the charge transport layer." Col. 11, lines 24-26.

Yanus discloses a charge transporting polymer obtained by reacting the arylamine compound N,N'-diphenyl-N,N'-bis(3-hydroxyphenyl)-[1,1'-biphenyl]-4,4'diamine with sebacoyl chloride. Example III at col. 24. Yanus discloses that imaging members comprising its charge transporting polymer retain stable electrical properties during cycling, and exhibit a greater resistance to cracking and crazing induced by liquid ink carrier fluids. Col. 6, lines 49-52 and 66-68, and example V at col. 25.

It would have been obvious for a person having ordinary skill in the art, in view of the teachings of Pai and Yanus, to use Yanus's

charge transporting polymer comprising polysebacoyl as the charge transporting polymer in the imaging member rendered obvious over the combined teachings of Pai, Brown, and the other cited references, because that person would had a reasonable expectation of successfully obtaining an electrophotographic imaging member having the benefits disclosed by Pai and Yanus.

27. Applicants' arguments filed on Apr. 30, 2004, with respect to the rejections over Pai in paragraphs 24-26 above have been fully considered but they are not persuasive.

Applicants assert that Pai fails to teach or suggest the overcoat layer and crosslinked silicone rubber recited in instant claims 1 and 2. Applicants assert that the examiner has failed to identify any teachings in the cited art of these features. Applicants further assert that the examiner has failed to provide any explanation or theories as to why dependent claims 13-16, 20-24, and 26 are unpatentable over the prior art.

Applicants' allegations are without merit. As discussed in the rejection in the last office action re-mailed on Feb. 10, 2004, paragraph 22, pages 35-38 that is substantially repeated in paragraph 24, supra, Pai teaches an imaging member that comprises all of the elements recited in the instant claims, but for the presence of the cross-linked silicone rubber and overcoat layer. See the rejection in paragraph 24 above, pages 42-45, which discusses the imaging member disclosed by Pai. As noted by applicants, Pai teaches

that its imaging member may further comprise an overcoat layer. Brown teaches the use of a bilayer topcoat comprising a cross-linked silicone rubber that meets the overcoat layer and cross-linked silicone rubber limitations recited in the instant claims and provides reason, suggestion, and motivation for using its bilayer topcoat in electrophotographic imaging members. See paragraph 24 above, page 45, which incorporates the discussion of Brown in paragraph 18 by reference. Contrary to applicants' statement that the examiner does not apply the art of Hendrickson, Knauf, and Grant & Hackh's, the rejection does apply the teachings in those references as they relate to the discussion of Brown's bilayer topcoat. As stated in the rejection in paragraph 24 above, the discussion of Brown's bilayer topcoat in paragraph 18 is incorporated by reference into the rejection in paragraph 24. The discussion of Brown's bilayer topcoat in paragraph 18 further incorporates by reference of discussion of Hendrickson's release layer in paragraph 15 above. Thus, the examiner has identified where in the references disclose the various features recited in instant claims 1 and 2, and where in the references there is reason, motivation, and suggestion for a person having ordinary skill in the art to use the bilayer topcoat layer disclosed by Brown in the imaging member disclosed by Pai.

Applicants' assertions regarding the alleged failure of the examiner to address the limitations recited in instant claims 13, 15, 16, 22, 23, 24, and 26 are without merit. (Applicants' comments

regarding claim 20 are moot since the instant rejection over Pai in paragraph 24 does not reject claim 20.)

(1) Regarding claims 13, 15, and 16, the rejection in the last office action re-mailed on Feb. 10, 2004, paragraph 22, page 37, that is substantially repeated in paragraph 24 above, page 44, item (5), points out that the arylamine charge transport molecules N,N'-diphenyl-N,N'-bis(3-methylphenyl)-(1,1'-biphenyl)-4,4'-diamine, in the charge transport layer disclosed by Pai meet the limitations recited in instant claims 13-16.

(2) The rejection in paragraph 24 above at page 43, item (2), addresses the "charge blocking layer" limitations recited in instant claims 22 and 23. The "charge blocking layer" limitations recited in those claims were not addressed in the office action re-mailed on Feb. 10, 2004, because the previously entered claim 1 filed on Sep. 12, 2003, from which claims 22 and 23 depend, recited that the charge blocking layer was an "optional" layer. Because the charge blocking layer was "optional," the references did not have to disclose or suggest the "charge blocking layer" limitations recited in claims 22 and 23 to render those claims unpatentable.

(3) Regarding claims 24 and 26, the rejection in paragraph 24 above, at page 45, incorporates by reference the discussion of Brown's bilayer topcoat in paragraph 18 above. Thus, the rejection in paragraph 24 above does explain why the bilayer topcoat of Brown meets the limitations recited in instant claims 24 and 26.

Accordingly, for the reasons discussed in the rejection in paragraph 24 above, the imaging members recited in the instant claims are obvious over the cited prior art.

With respect to the rejection set forth in paragraph 25 above, applicants assert that the examiner has failed to identify any teaching in the cited art supporting the particular art combination.

To the extent that applicants' arguing that the examiner has combined an excessive number of references, the Federal Circuit has held that reliance on a large number of references in a rejection does not, without more, weigh against the obviousness of the claimed invention. *In re Gorman*, 933 F.2d 982, 18 USPQ2d 1885 (Fed. Cir. 1991). What matters is whether the person having ordinary skill in art would have had adequate reasons to combine the various teachings. Id.

The references of Borsenberger, Hendrickson, Knauf, and Grant & Hackh's are cited as evidence to show that the components in Pai and Brown have the properties recited in instant claims. Moreover, the rejections in paragraphs 24 and 25 above indicates where in the references of Pai, Brown, and Horgan there is support for the various features recited in the instant claims. The rejection in paragraph 24 above indicates where in Brown there is reason, motivation, and suggestion to use Brown's bilayer topcoat in the imaging member disclosed by Pai. The rejection in paragraph 25 above indicates where there is reason, motivation, and suggestion in Pai to use the conductive coatings of Horgan in the imaging member rendered obvious

over the combined teachings of Pai, Brown, and the other cited references.

Accordingly, for the reasons discussed in the rejection in paragraph 25 above, the imaging members recited in instant claims 4 and 5 are obvious over the cited prior art.

With respect to the rejection set forth in paragraph 26 above, applicants further assert that the examiner has failed to provide any reasons as to a teaching in the collection references to combine the features recited in instant claim 19, which depends from "claims 15, 14, 13, and 1."

However, as discussed in the rejection in the last office action re-mailed on Feb. 10, 2004, paragraph 24, page 40, that is substantially repeated in paragraph 26 above, which incorporates by reference the description of the imaging member disclosed by Pai in paragraph 24 above, Pai discloses a charge transport layer comprising an aryl amine compound meeting the limitations recited in instant claim 15 and a charge transporting polymer. See the rejection in paragraph 24 above item (5) at page 44. Because claims 14 and 15 depend from claim 13, the arylamine compound limitation recited in claim 13 is met. Furthermore, as discussed in the rejection in paragraph 26 above, and as acknowledged by applicants, Yanus teaches a "polysebacoyl" charge transporting polymer that meets the polymer recited in instant claim 19. Yanus also teaches the benefits of using its charge transporting polymer in imaging members. Thus, for the

reasons discussed in the rejection in paragraph 26, the rejection stands.

28. Claims 1, 2, 6-9, 12-18, 21-23, 25, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pai combined with (1) Borsenberger et al., Organic Photoreceptors for Imaging Systems, pp. 289-292, (2) US 4,424,267 (Kondo), and (3) Grant & Hackh's Chemical Dictionary, fifth edition, page 503.

Pai discloses a photoconductive imaging member as described in paragraph 24 above, which is incorporated herein by reference.

As discussed in paragraph 24, Pai does not identify the titanium surface layer as a charge injection surface as recited in instant claims 1 and 2. However, Borsenberger teaches that "usually a thin blocking layer is interposed between the electrode [the conductive substrate or layer] and the photoreceptor [e.g., the charge transport layer and the charge generation layer, or a single layer] to prevent charge injection" (emphasis added). Borsenberger, paragraph bridging pages 290 and 291, and Fig. 1. Pai's layer (1), the conductive substrate or layer, has a thin hole blocking layer (2) interposed between the "electrode" and the photoreceptor (i.e., the charge generation layer (4) and the charge transport layer (5)). Thus, it appears that the titanium surface layer of Pai's conductive substrate is a charge injection surface as recited in the instant claims. The burden is on applicants to prove otherwise. Fitzgerald, supra.

Pai does not disclose that its imaging member further comprises an overcoat layer or a crosslinked silicone rubber as recited in instant claims 1 and 2. However, Pai discloses that its imaging member may comprise an overcoat layer to improve the resistance to abrasion. Col. 20, lines 54-55. Pai further discloses that the overcoating layer is well-known in the art. Col. 20, lines 58-59.

Kondo discloses a two layer topcoat for photoconductive imaging members. Kondo discloses that the photoconductive layer can be coated with a curable rubber layer and an insulating layer on top of the curable rubber layer. Col. 4, lines 10-13. Kondo teaches that curable rubber may be a curable silicone rubber. Col. 4, line 46. Kondo discloses that the curable rubber used in its curable rubber layer is a rubber which is cured by energy, such as heat, light, an electron beam and the like. Col. 4, lines 28-30. Kondo discloses that the "curing is caused by the formation of crosslinking and three dimensional chemical structure, and thereby rubber elastic property is decreased." Col. 4, lines 30-33. Thus, Kondo teaches a cross-linked silicone rubber layer, as recited in instant claims 1 and 2. According to Kondo, the curable rubber layer improves the adhesion between the photoconductive layer and the insulating layer, which improves the durability of the imaging members to a great extent. Col. 3, lines 37-50; and the table at col. 8 (in particular compare Sample A and comparative Sample B). The table at col. 8 shows that the photoconductive member in Sample A, which comprises the curable rubber layer and the insulating top layer, produced more than 35,000

copies without degrading. However, the table shows that the photoconductive member in Sample B, which only comprises the insulating top layer, produced only 2,000 copies before part of the top layer peeled off.

Kondo discloses that the insulating top layer may have a preferred thickness from 0.1 to 50 micrometers. Col. 5, lines 4-6. Kondo exemplifies an insulating layer comprising a silicone resin having a layer thickness of 10 micrometers, which is within the range of "about 5 micrometers to about 10 micrometers" recited in instant claim 25. Col. 9, lines 32-35.

Kondo further discloses an imaging process comprising the steps of (1) charging an imaging member comprising the insulating silicone resin layer and (2) imagewise exposing the charged imaging member to light to form an electrostatic latent image. Col. 6, lines 42-49; col. 8, lines 18-22; and Sample (G), col. 9, lines 33-35. Thus, Kondo demonstrates that the insulating silicone resin layer is "substantially transparent to activating radiation" as recited in instant claim 26.

Kondo does not disclose that its insulating silicone resin layer is "electrically insulating" and "resilient" as recited in instant claims 1, 2, and 26. However, Kondo's insulating silicone resin layer does not appear to contain any groups that would render it electrically conductive. In addition, the word "resilient" is commonly defined as "elastic, rebounding." See Grant & Hackh's Chemical Dictionary, page 503. According to Kondo, the insulating

layer is formed for "the purpose of protecting the photoconductive layer, improving the mechanical strength of the photosensitive member, and bettering the dark decay characteristics of the member. Col. 1, lines 40-44. Because the Kondo insulating silicone layer does not appear to comprise any groups that would render it electrically conductive and improves the mechanical strength of the photosensitive member, it is reasonable to conclude that Kondo's insulating layer is "electrically insulating" and also "resilient." The burden is on applicants to prove otherwise. Fitzgerald, supra.

It would have been obvious for a person having ordinary skill in the art to form on the surface of the photoconductive imaging member disclosed by Pai a crosslinked silicone rubber layer and an insulating silicone resin layer having a thickness of 10 micrometers on the crosslinked silicone rubber layer as taught by Kondo, because that person would have had a reasonable expectation of successfully obtaining a photoconductive imaging member having improved durability and mechanical strength as taught by Kondo.

29. Claim 10 is allowable over the prior art of record.

The prior art of record does not teach or suggest a hole blocking layer comprising a crosslinked polysiloxane polymer network impregnated with a hydroxy-functionalized polymer and photogenerating pigments as recited in instant claim 10. As discussed in paragraph 18 above, Ong'737 discloses a cross-linked polysiloxane polymer that meets formula (III) recited in instant claims 11, 28, and 29. The

crosslinked polysiloxane polymer taught by Ong'737 forms a network impregnated with hydroxy-containing polymers. However, Ong'737 does not teach or suggest that its crosslinked polysiloxane polymer is also impregnated with photogenerating pigments as recited in instant claim 10.

30. Applicants' amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL.** See MPEP § 706.07(a). Applicants are reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

31. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Janis L. Dote whose telephone number is (571) 272-1382. The examiner can normally be reached Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Mark Huff, can be reached on (571) 272-1385. The central fax phone number is (703) 872-9306.

Any inquiry regarding papers not received regarding this communication or earlier communications should be directed to Supervisory Application Examiner Ms. Claudia Sullivan, whose telephone number is (571) 272-1052.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-

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JLD
Oct. 21, 2004

JANIS L. DOTE
PRIMARY EXAMINER
GROUP ~~1600~~ 1700